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Ratasuk et al.
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Amendments to the Claims:

1. (Currently Amended) A method comprising:

- providing at least two communication services to be transmitted using at least one code division multiplexing code, wherein the at least two communication services comprise at least a first communication service to be transmitted pursuant to a first level of quality-of-service and a second communication service to be transmitted pursuant to a second level of quality-of-service;
- selecting a given one of the communication services and using that given one of the communication services and a level of quality-of-service that corresponds to the given one of the communication services to govern outer loop power control during transmission of the at least two communication services using the at least one code division multiplexing code;
- selecting rate matching parameters for each of the at least two communication services based on the rate matching (RM) parameters of the given one of the communication services according to:

$$\{RM_1, RM_2, \ldots, [[RM_I]]\ \underline{RM_I}\} = \{\alpha_1 RM_1, \alpha_2 RM_1, \ldots [[\alpha_I RM_I]]\ \underline{\alpha_I RM_I}\}$$

where I is the total number of communication services to be transmitted and RM_1 is the rate mating parameter for the given one of the communication services;

- selecting a rate matching parameter ratio for service i of the at least two communication services (α_i) according to:

$$\alpha_i = \beta \times \log\left(\frac{SFER_i}{SFER_1}\right)$$

where β is a constant that relates processing gain of the at least two communication services to service frame error rate and ~~SFER~~ $SFER_i$ is the service frame error rate for service i of the at least two communication services and $SFER_1$ is the service frame rate for the given one of the communication services.

2. (Original) The method of claim 1 wherein providing at least two communication services includes providing at least one of:

- a voice service and a data service;

- a first data service and a second data service.

3. (Original) The method of claim 1 wherein providing at least two communication services to be transmitted using at least one code division multiplexing code, wherein the at least two communication services comprise at least a first communication service to be transmitted pursuant to a first level of quality-of-service comprises using transmitted data error information to characterize the quality-of-service.

4. (Original) The method of claim 3 wherein using transmitted data error information to characterize the quality-of-service comprises using frame error rate information to characterize the quality-of-service.

5. (Original) The method of claim 1 wherein selecting a given one of the communication services comprises selecting a given one of the communications services that has a highest level of quality of service as compared to others of the at least two communications services.

6. (Original) The method of claim 5 wherein selecting a given one of the communications services further comprises ordering the communications services in order of highest level of quality-of-service to a lowest level of quality-of-service.

7. (Cancelled)

8. (Previously Presented) The method of claim 1 wherein determining a rate matching parameter ratio includes using the rate matching parameter ratio to allocate transport channel sizes to be used to transmit the communication services.

9. (Original) The method of claim 8 wherein allocating transport channel sizes comprises at least one of:
- increasing a quantity of transmitted symbols as corresponds to at least one of the communication services; and

- decreasing a quantity of transmitted symbols as corresponds to at least one of the communication services.

10. (Previously Presented) The method of claim 1 wherein determining a rate matching parameter ratio comprises determining a proportional processing gain for at least some of the communication services.

11. (Original) The method of claim 10 wherein determining a proportional processing gain for at least some of the communication services comprises determining a proportional processing gain for each of the communication services other than the given one of the communication services.

12. (Cancelled)

13. (Original) The method of claim 1 and further comprising selecting a transmit energy level.

14. (Original) The method of claim 13 wherein selecting a transmit energy level comprises determining power requirements to likely achieve each of the preferred levels of quality-of-service and determining the transmit energy level as a function of the power requirements.

15. (Currently Amended) The method of claim 14 wherein determining the transmit energy level as a function of the power requirements includes determining transmit energy level E_c as a function of:

$$E_c = \sum_{i=1}^{I} \left(\frac{N_i}{F_i} E_b^i R_i \Big/ N \times SF \right)$$

where N_i and F_i represent a number of code symbols and radio frames per ~~TTI~~ Transmission Time Interval, R_i represents a coding rate, SF represents a spreading factor,

E_b^i represents required energy for service i, and N represents a total number of symbols to be transmitted.

16. (Original) The method of claim 1 further comprising modifying at least some of the rate matching parameters during transmission of the communication services using the common code division multiplexing code.

17. (Original) The method of claim 16 and further comprising receiving information regarding substantially current channel conditions and wherein modifying at least some of the rate matching parameters during transmission of the communication services comprises modifying at least some of the rate matching parameters during transmission of the communication services as a function, at least in part, of the current channel conditions.

18. (Cancelled)

19. (Original) The method of claim 16 further comprising storing at least some information that corresponds to modifications of the rate matching parameters and using the information to determine rate matching parameters to support a subsequent communication session.

20. (Cancelled)

21. (Currently Amended) An apparatus to provide a desired level of quality-of-service for each of a plurality of communication services that are to be transmitted using a common code division multiplexing code, comprising:

- input means for receiving at least:
  - first data that corresponds to a first communication service having a first corresponding desired level of quality-of-service; and

- second data that corresponds to a second communication service having a second corresponding desired level of quality-of-service;

- selection means for selecting a particular one of the first data and the second data to provide selected data;

- outer loop power control means to effect outer loop power control during transmission of the plurality of communication services using the desired level of quality-of-service that corresponds to the selected data;

- rate matching parameter selection means for determining a rate matching (RM) parameter for each of the communication services based on the rate matching parameter of the particular one of the first data and the second data according to:

$$\{RM_1, RM_2, \ldots, [[RM_b]]\ \underline{RM_I}\} = \{\alpha_1 RM_1, \alpha_2 RM_1, \ldots [[\alpha_I RM_b]]\ \alpha_I RM_I\}$$

where I is the total number of communication services to be transmitted and RM_1 is the rate mating parameter for the selected data and where a rate matching parameter ratio for service i of the plurality of communication services (α_i) according to:

$$\alpha_i = \beta \times \log\left(\frac{SFER_i}{SFER_1}\right)$$

where β is a constant that relates processing gain of the ~~at least two~~ plurality of communication services to service frame error rate and ~~SFER~~ $SFER_i$ is the service frame error rate for service i of the at least two communication services and $SFER_1$ is the service frame rate for the given one of the communication services.

22. (Original) The apparatus of claim 21 wherein the rate matching parameter selection means determines a rate matching parameter ratio substantially independently of transmission energy factors.

23. (Original) The apparatus of claim 22 wherein the selection means selects a particular one of the first and second data that has a highest corresponding quality-of-service.

24. (Original) The apparatus of claim 21 and further comprising transmission energy selection means for selecting a transmission energy level to use when transmitting the communication services.

25. (Original) The apparatus of claim 21 and further comprising rate matching parameter modification means for modifying at least some of the rate matching parameters subsequent to determining the rate matching parameters.

26. (Original) The apparatus of claim 25 wherein modifying at least some of the rate matching parameters includes modifying a rate matching parameter ratio.

27. (Currently Amended) A method comprising:
- providing at least two communication services to be transmitted using at least one code division multiplexing code, wherein the at least two communication services comprise at least a first communication service to be transmitted pursuant to a first level of quality-of-service and a second communication service to be transmitted pursuant to a second level of quality-of-service;
- selecting a given one of the communication services and using that given one of the communication services and a level of quality-of-service that corresponds to the given one of the communication services to govern outer loop power control during transmission of the at least two communication services using the at least one code division multiplexing code;
- selecting rate matching parameters for each of the at least two communication services independently of transmission energy factors;
- selecting a transmit energy level;
- determining power requirements to likely achieve each of the preferred levels of quality-of-service
- determining the transmit energy level as a function of the power requirements including determining transmit energy level E_c as a function of:

$$E_c = \sum_{i=1}^{I} \left(\frac{N_i}{F_i} E_b^i R_i \Big/ N \times SF \right)$$

where I is the total number of communication services transmitted, N_i and F_i represent a number of code symbols and radio frames per ~~TTI~~ Transmission Timer Interval, R_i represents a coding rate, SF represents a spreading factor, E_b^i represents required energy for service i of the at least two communication services, and N represents a total number of symbols to be transmitted.